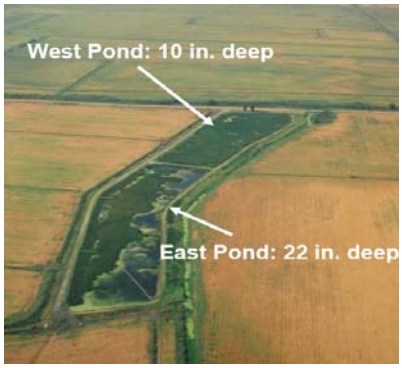
STATE OF CALIFORNIA
Interim Delta Actions
DEPARTMENT OF WATER RESOURCES

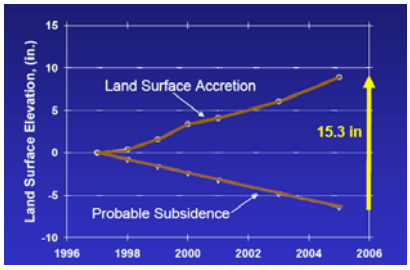
May 2008

DWR and US Geological Service Wetland Research Facility

Located in the western Delta, Twitchell Island is heavily subsided.



Tules and other vegetation are cultivated at the Wetlands Research Facility.



Long term data suggests subsidence can be reversed using management techniques.

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Project Goals:

1. Undertake a long-term study/evaluation of vegetation growth to reverse subsidence in the Delta.
2. Evaluate on-and-off-site impacts of subsidence reversal projects.

Project Description:

Since 1997, DWR and the US Geological Survey (USGS) have been studying subsidence reversal on DWR-owned property on Twitchell Island. The project consists of two wetland sites totaling approximately 15 acres. Researchers have monitored land surface elevation changes and carbon accretion due to the accumulation and decay of plant materials.

Studies at this facility have shown that surface elevation changes due to accretion ranges from 3.2 and 5.6 cm/yr (1.3 - 2.2 in/yr), while surrounding areas used for agricultural purposes lost elevation due to subsidence. The new material bulk density is fairly low (i.e. less than 0.1 g/cm3) but has a high degree of structural integrity.

Additional research activities proposed by USGS include assessments of water quality impacts, greenhouse gas (GHG) release, and other impacts of tule cultivation in subsided Delta Islands.

Research at the Twitchell site has shown that appropriate land management practices can not only eliminate but also reverse subsidence. The project has cost $4 million to date, and is anticipated to continue through at least 2011 at an annual cost of approximately $400,000. Long-term test plots provide significant opportunities for the assessment of impacts of restoration as well as quantification of ecological “co-benefits” from the project’s subsidence reversal techniques.

Schedule and Milestones:

1997 – Project launched

2008 – Data and lessons learned are applied to other Delta subsidence reversal projects

2011 – Current projected end date for project